

Your Long-Term Storage is Organized Based on Meaning: Schemas

A schema is a cognitive structure that aids in the perception, organization, processing and use of information ([page 274](#)).

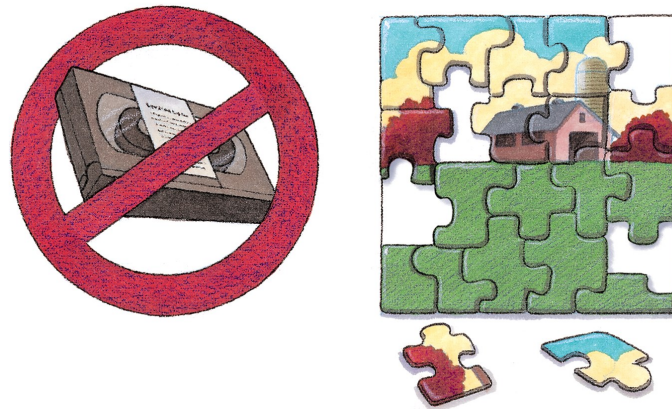
For example, with the absence of a schema, the following seems random and obscure.

The procedure is actually quite simple. First arrange things into different groups. Of course, one pile may be sufficient depending on how much there is to do. If you have to go somewhere else due to lack of facilities that is the next step, otherwise you are pretty well set. It is important not to overdo things. That is, it is better to do too few things at once than too many. In the short run this may not seem important but complications can easily arise. A mistake can be expensive as well. At first, the whole procedure will seem complicated. Soon, however, it will become just another facet of life. It is difficult to foresee any end of the necessity for this task in the immediate future, but then one never can tell. After the procedure is completed, one arranges the materials into different groups again. They can be put into their appropriate places. Eventually they will be used once more and the whole cycle will eventually have to be repeated. However, that is part of life.

Activating the laundry schema helps organize and make sense of these statements.

Organization of Long-Term Memory: Schemas

Schemas can help you construct new memories by filling in holes with existing memories, overlook inconsistent information and interpret meaning based on your experiences ([page 274](#)).



In American culture, activating a dinner schema allows people to fill in a typical meal or a typical time without being explicit.

Schemas and Memory Distortions

In this demonstration, participants were asked to wait in this office for the study on memory to begin.



Afterwards, they were brought to another room and asked to recall as many objects in the office they were waiting in.

Schemas and Memory Distortions

The participants had correct and incorrect recollections about the office:

	Items that were in the office	Items that were not in the office
Items that are typically in an office and consistent with "office schema"	<ul style="list-style-type: none">• Chair• Bookcase• Desk• Typewriter	<ul style="list-style-type: none">• Books• Telephone• Filing cabinets• Pens and pencils• Coffee cups
Items that are typically not in an office and inconsistent with an "office schema"	<ul style="list-style-type: none">• Coffee pot• Wine bottle• Picnic basket	

Correct recollections by participants

Items recalled by participants, but were not present

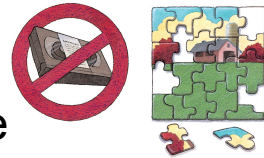
Items not recalled by participants, but were present



Schemas and Memory Distortions

How do psychologists explain these errors in memory recall?

Most people do not pay attention to the details and encode the content of the office because it is not very important for their daily life. A majority of the contents of office entered sensory memory, but was not encoded (see *encoding failure*) into *short-term memory* and quickly forgotten.



A schema is an organized cluster of information about a particular topic ([a different definition](#)).

To help “remember” and reconstruct the contents of the office, people activated an “office schema” and inferred items that are typically in an office. This means:

- Remembering things that are typically in an office (regardless if they were in there or not).
- Not remembering or forgetting things that were in the office but not in a typical office.

Schemas and Memory Distortions

- Information consistent with most office schemas would include telephone, books, lamp, etc.
- Information inconsistent with most office schemas would include candles, cars, submarines, etc.

You can generalize how schemas affect memory by the following:

- We tend to remember things that are consistent with a schema.
- We tend to forget things that are inconsistent with our schema.

Schemas and Memory Distortions (Passer and Smith, 2nd edition, [page 264](#))

The following story is the general framework of a Pacific Northwest Indian tale from the 18th century.

The War of the Ghosts

This story describes two young men who go down to a river to hunt seals. While there, warriors in canoes come up to the river, and one of the young men agrees to join them for a raid on a town. During the raid, the man discovers that his companions are ghosts, and later he dies a mysterious death.

When 20th century residents of England (not 18th century Native Americans) were told the story and retell it days later, the story was reconstructed in a way that made sense to them.

One participant

- shortened the story by almost half,
- describe the hero as fishing, rather than as hunting seals,
- substituted the word boat for canoe, and
- said that the enemy was ghosts, not the companions.

These changes were consistent with English culture.

Schemas about People and Memory

In the following demonstration, people looked at this picture and later asked to describe what occurred.



Figure 6.11

Psychologist Gordon Allport showed subjects this picture for a very brief period of time to test the accuracy of their "eyewitness" testimony in a situation in which racial prejudice might influence their perception.

From "Eyewitness Testimony" by Robert Buckhout. Copyright © 1974 by Scientific American, Inc. All rights reserved.

Schemas and Memory

Activating schemas involving race can make you forget things that are inconsistent with your schema and remember things that are consistent with that schema—regardless of the reality.

This experiment was done when stereotypes of black people were quite negative (e.g., people had a stereotype that black people are more likely to rob a person). With this stereotype, people remembered the following that **were not** true:

- The black man was more aggressive.
- The white person was more passive.
- The passengers were afraid.
- The razor was in the black man's hand.

Schemas and stereotypes can influence memory, and has the potential to influence our behavior, attitudes, or decisions, by not giving those with inaccurate schemas the benefit of doubt or opportunities. If you have a negative stereotype of minorities, members of groups you consider “outcast” or deviant, you are more likely to interpret behavior as being criminal and notice more “criminal behavior” in minorities and ignore “criminal behavior” in non-minorities.

Schemas and Memory of Piaget's Conservation Task



1 A young child believes that a tall 8 oz. glass contains more juice than a short 8 oz. glass.



2 Here, the child watches the juice being poured from the tall glass into a second short glass.



3 She is surprised to see that the short glass holds the same amount of juice as the tall glass.

FIGURE 4.17

Maya Barnes Johansen/TopFoto
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In the water conservation task, young children believe there is more water in the tall glass (top picture). When poured into a shorter glass, young children say there is the same amount of water (bottom picture).

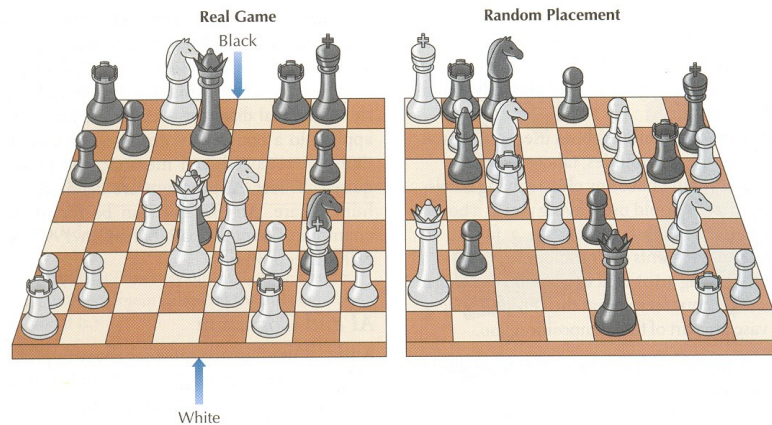
Young children overcome this error in the conservation of water task around age 7.

However, children in Third World countries overcome this error at an earlier age than American children. This is counter intuitive and may not match our schema of education, children and America. Because this is inconsistent with our schema, we are likely to remember the wrong information. The wrong information is that American children overcome this at an earlier age, which matches our schema.

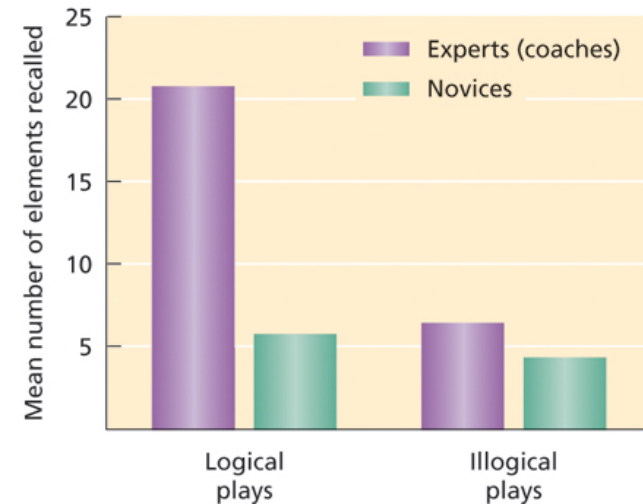
When something is inconsistent with our schema, we may need to pay extra attention and expend extra effort to remember it and why it is this way.

Schemas, Memory and Expertise

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• **FIGURE 10.18** The left chessboard shows a realistic game. The right chessboard is a random arrangement of pieces. Expert chess players can memorize the left board at a glance, yet they are no better than beginners at memorizing the random board (Saariluoma, 1994). Expert performance at most thinking tasks is based on acquired strategies and knowledge. If you would like to excel at a profession or a mental skill, plan on adding to your knowledge every day (Holyoak, 1990).



Expert coaches had better memory for logical plays and expert chess players had better memory for chess pieces in a real game suggesting a previous framework (schemas) facilitated memory.

However, when expert coaches saw illogical plays and expert chess players saw random pieces in a real game, their memory was no better than novices.

What are examples where labels (which activate schemas) affect what we remember and think?

A schema is an organized cluster of information about a particular topic.

Schemas can affect social perception, especially in race relations. The language and labels you use activate certain schemas and affect your perception of political, social and personal issues.

Choosing the language and hence the schema can frame an issue. It influences how a person perceives the event, what they see, and remember about the event, regardless of the reality. If you can control the framing of an issue, you can affect public perception of that issue.

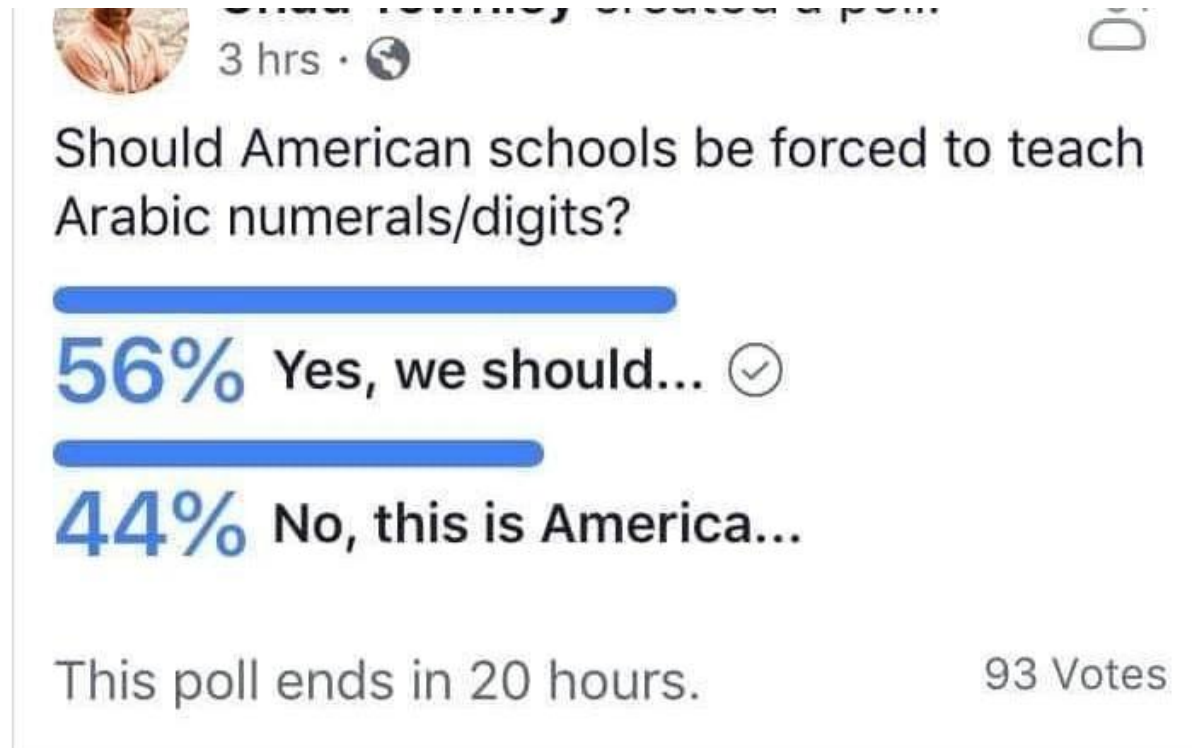
Without context and background information (which is often not provided or known) or you know very little about the topic, it is difficult to assess the appropriateness of the labels and schemas that are provided.

Schemas and Attitudes

The activation of different schemas can lead to different responses. This is why controlling the message is important.

DO YOU FAVOR OR OPPOSE _____ BEING ALLOWED TO SERVE OPENLY?		
	"Homosexuals"	"Gay Men & Lesbians"
Favor	44%	58%
Oppose	42%	28%

Schemas and Attitudes



In this non-scientific survey, a significant percentage of respondents said we should NOT be forced to teach Arabic numbers/digits. Most people do not know what Arabic numerals/digits are, so to decide, they activate an Arabic schema.

Schemas and Health Care

4 hrs · 🧑

One step closer to fixing this mistake, and only a couple weeks left of Barry's regime. 2017 is already looking up.



Senate votes 51 to 48 to Repeal Obamacare
Senate votes 51 to 48 to Repeal Obamacare
C-SPAN.ORG

Like · Comment · Share

🤔👎 7

Really cool of you to treat those of us who need the assistance provided by the ACA with such disregard. Really sells that whole underlying theme of republicans acting like vindictive cunts for every perceived "slight" at the hands of democrats these past eight years. It's a party that now openly celebrates the misfortune of others while simultaneously patting themselves on the back for making "progress."

Like · Reply · 4 · 4 hrs

Jesus where to start? First, we're talking about Obamacare, not the ACA. Secondly, my health insurance is through the ACA, so I'm definitely not the kind of person to look down on others for needing help.

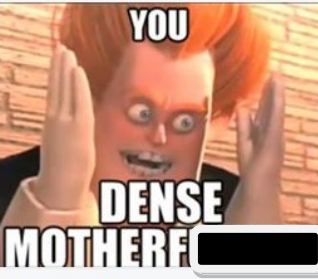
I'm just saying I'm glad this is finally happening because Obamacare was a failure from the start. Remember healthcare.gov!! All of this was the brain child of liberals and they couldn't even get the site to run right, so why should any of us have had faith they could get socialized healthcare right? We didn't and they couldn't.

Again, it was a mistake that is finally being fixed.
Like · Reply · 4 hrs

Wait, [redacted]. If you're on Obamacare why the [redacted] are you celebrating the outcome of this vote? If the Republicans get what they want, you'll lose your insurance.
Like · Reply · 4 hrs

I'm not on Obamacare. My health insurance is through the ACA (Affordable Care Act), which was what they had to come up with after Obamacare crashed and burned as bad as it did. So I'm gonna be fine.
Like · Reply · 4 · 4 hrs

Holy shit..



Like · Reply · 6 · 4 hrs

No, seriously, are you [redacted] kidding me? THEY'RE THE SAME FU [redacted] G THING! Obamacare is just a stupid name for the ACA that Republicans came up with to make moronic voters like you automatically despise the idea of it just by hearing the name. And it [redacted] ng worked I guess. 😂😂😂😂😂😂
Like · Reply · 5 · 4 hrs

Jesus Christ, [redacted]. Seriously? All this time, and you never once checked for yourself to see what was up with the whole Obamacare controversy? Didn't once bother asking if relying solely on Glenn [redacted] Beck for your political commentary might not be the best use of all the resources you have at your disposal?
Like · Reply · 4 · 4 hrs

You think he's going to respond?
Like · Reply · 1 · 4 hrs

LOL [redacted] no. Would you?
Like · Reply · 3 · 4 hrs

Dude, I can't even believe he hasn't deleted this whole thing yet. I would have purged this the second I realized I accidentally admitted to all my friends just how easily swayed I am by things like confirmation bias.

[redacted] ng hell. This may be the best thing that happens all year, and we're only 5 days in.
Like · Reply · 4 · 4 hrs

haha no shit right? 😂 I would have deleted my entire Facebook account by now.

It's made even better by just how smug he was coming across, as though he was the one who orchestrated the Senate vote, only to flat out crash and burn so badly by exposing his own ignorance.

Your Long-term Storage is Organized Based on Meaning: Associative Networks

The meaning of information that is organized in long-term storage is also based on networks of associations ([page 275](#)).

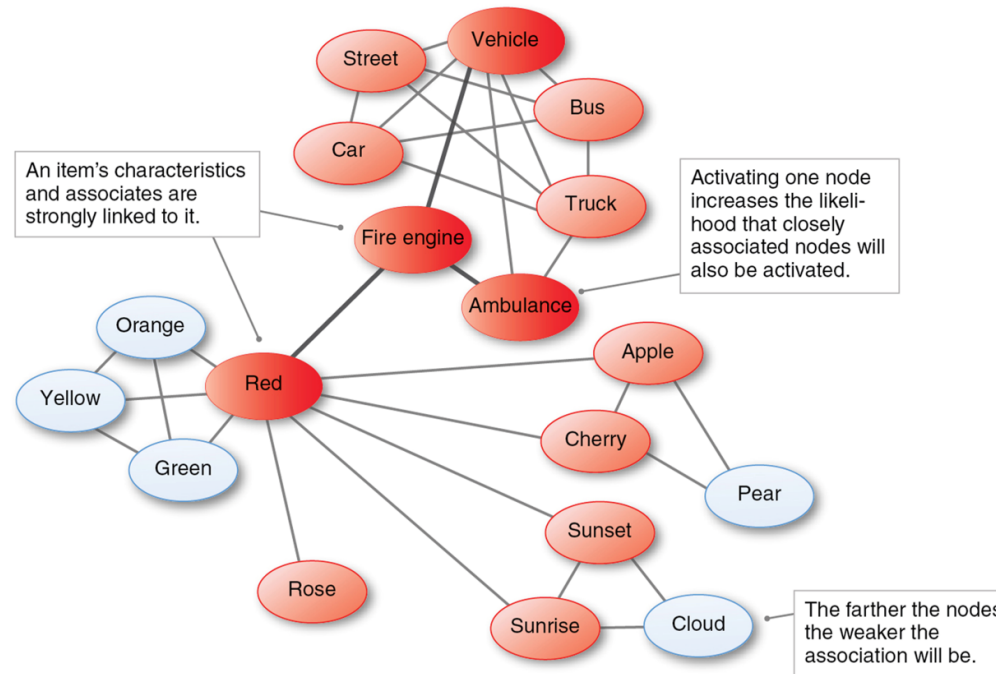


FIGURE 7.13

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Associative network model: Memories are organized in long-term memory storage based on the meaning of information. Concepts are connected through their associations. The closer the concepts are to each other, the stronger the association between them ([page 275](#)).

Associative Networks

An important feature of the network model is that activating one node increases the likelihood that closely associated nodes in the same category will also be activated ([page 275](#)).

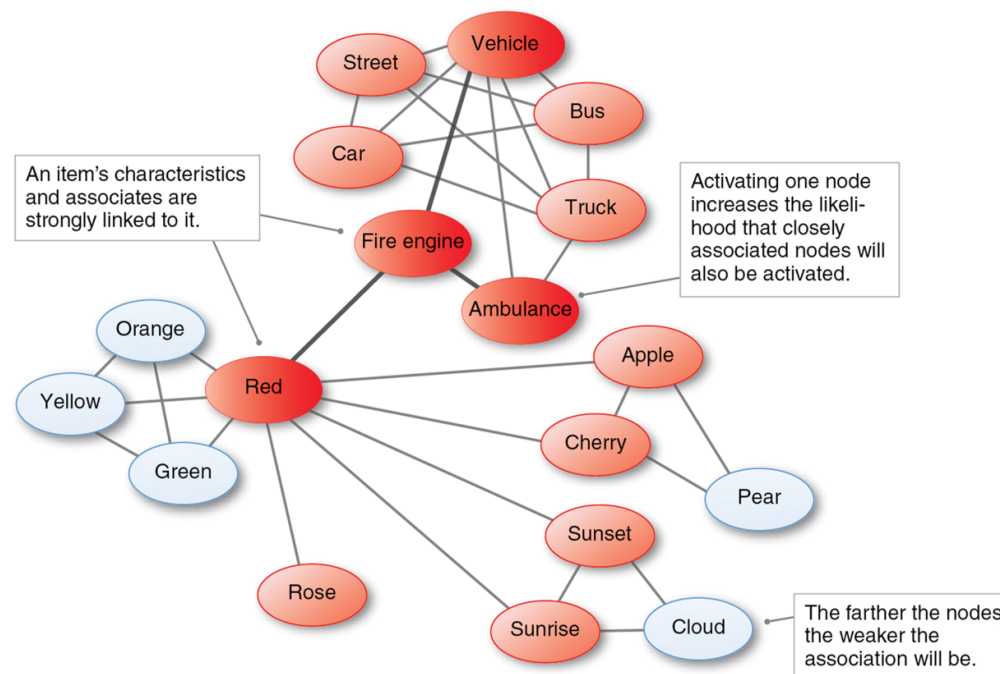


FIGURE 7.13

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Seeing a fire engine activates linked nodes, so you will quickly recognize other vehicles, such as an ambulance ([page 275](#)).

Associative Networks

In addition, having multiple retrieval cues or "tags" can help you retrieve information.

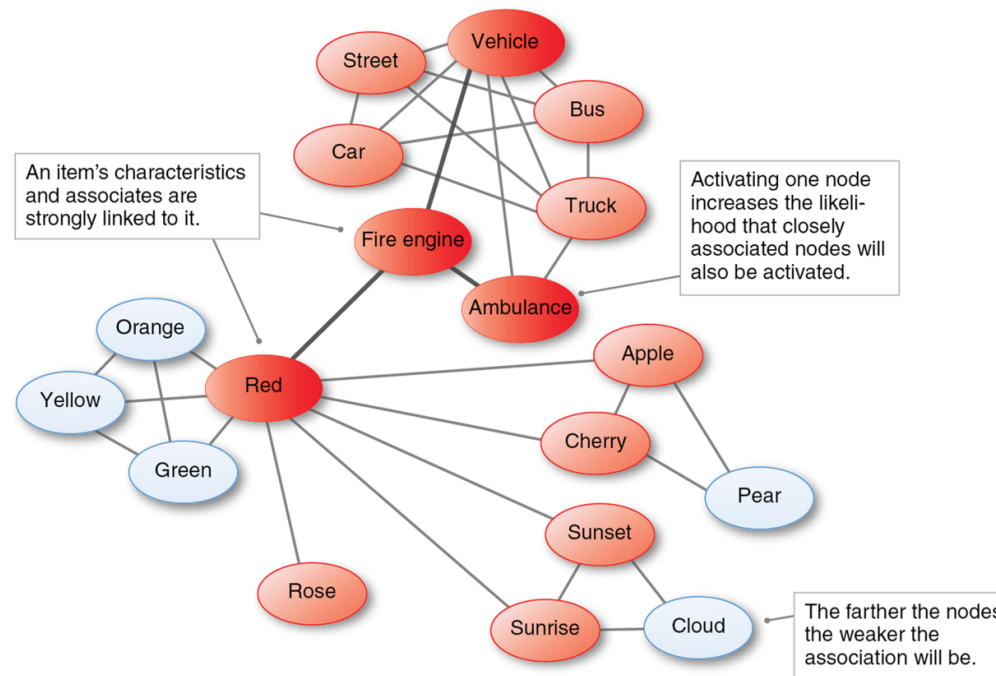


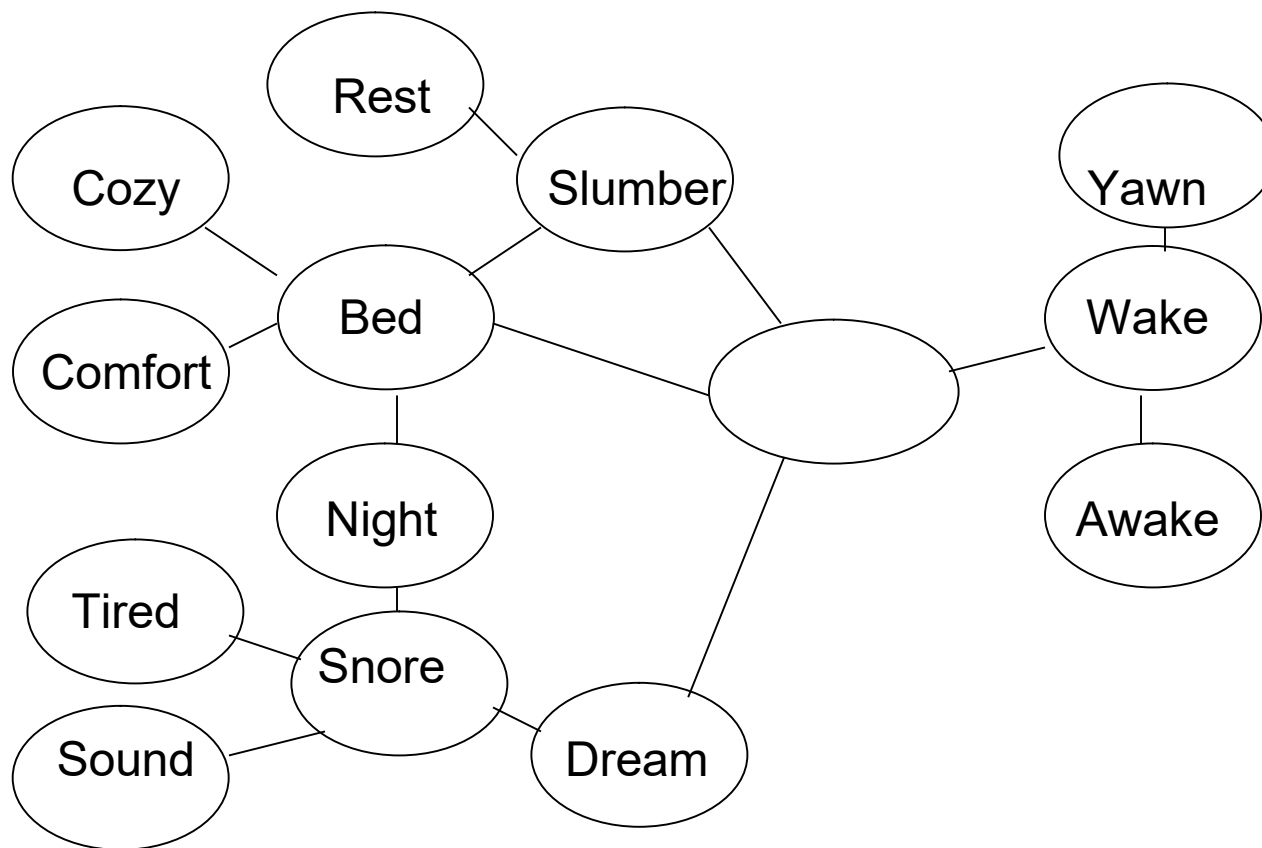
FIGURE 7.13

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If you are trying to retrieve "fire engine", but it is at the tip of your tongue. Knowing relations such as "red", "vehicle", "associated with ambulances" helps activate the link to "fire engine"--the spreading activation model of memory ([page 276](#)).

Schemas and Memory Distortions

In this example, hearing all of the sleep related words activated the schema of sleep. This process occurs unconsciously and automatically and is normal, but can cause problems if we are unaware of it. In this example, it created a false memory of sleep being on the list of items.

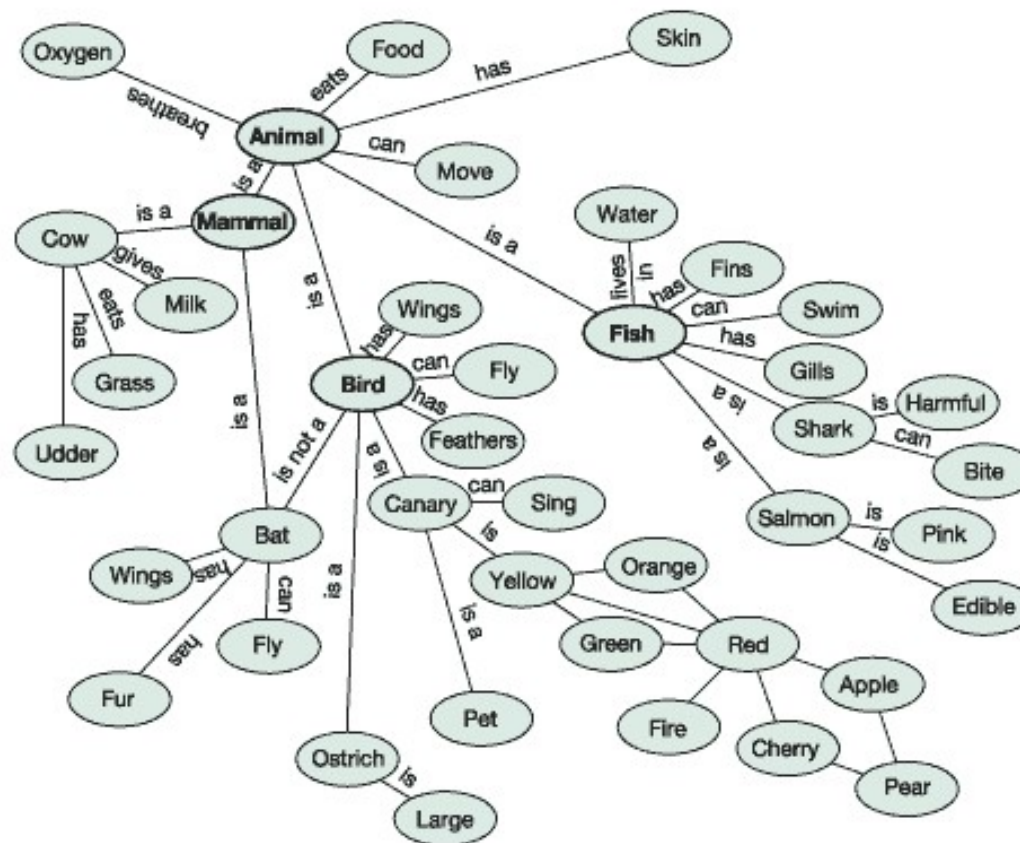


Sour	Thread
Candy	Pin
Sugar	Eye
Bitter	Sewing
Good	Sharp
Taste	Point
Tooth	Prick
Nice	Thimble
Honey	Haystack
Soda	Pain
Chocolate	Hurt
Heart	Injection
Cake	Syringe
Tart	Cloth
Pie	Knitting

Sweet and needle are the targets

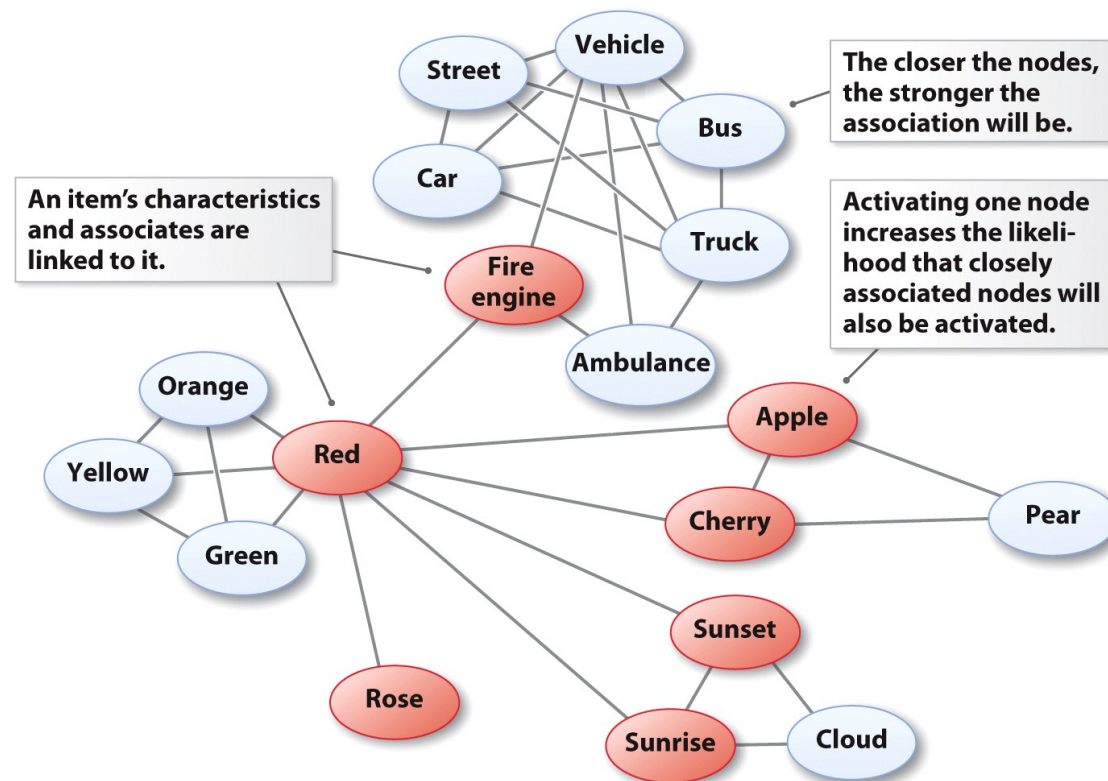
Associative Networks and Elaborative Rehearsal

Sometimes information can't be formed into neat categories and hierarchies. You may want to create a network of associations that link the ideas like a semantic network.

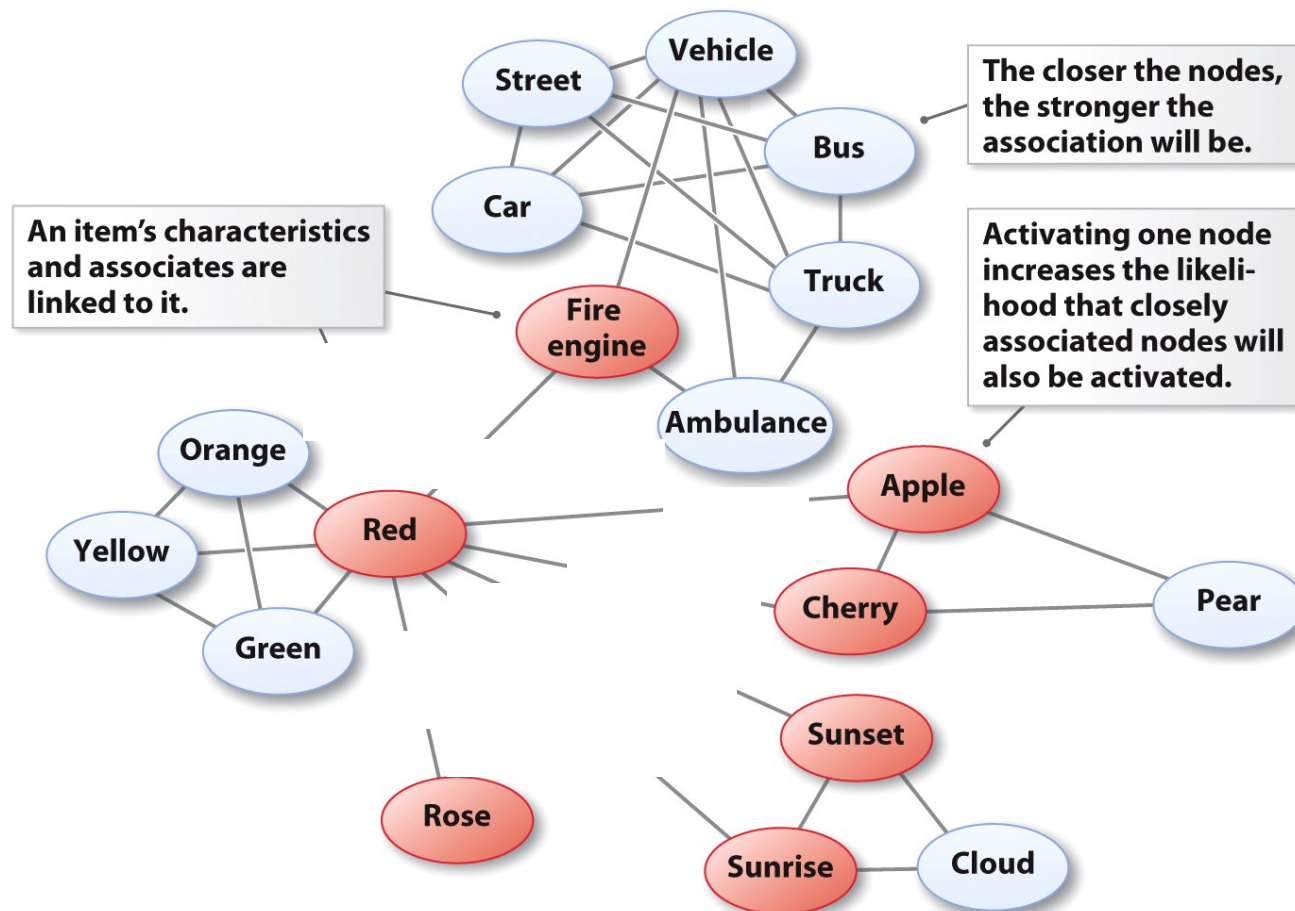


Associative Networks

Associative network model: Memories are organized in long-term memory storage based on the meaning of information. Concepts are connected through their associations. The closer the concepts are to each other, the stronger the association between them.



Isolated Information Makes Retrieval Difficult



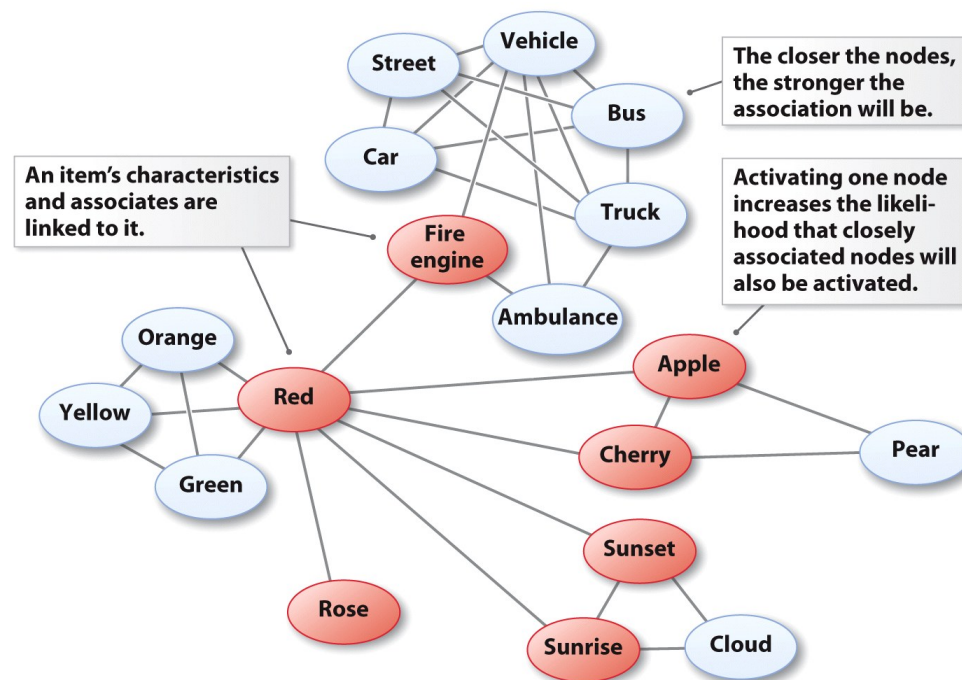
Psychological Science, 4/e Figure 7.17
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When you learn information without context or meaning, you lack links to access your prior knowledge. This makes retrieving the information more difficult.

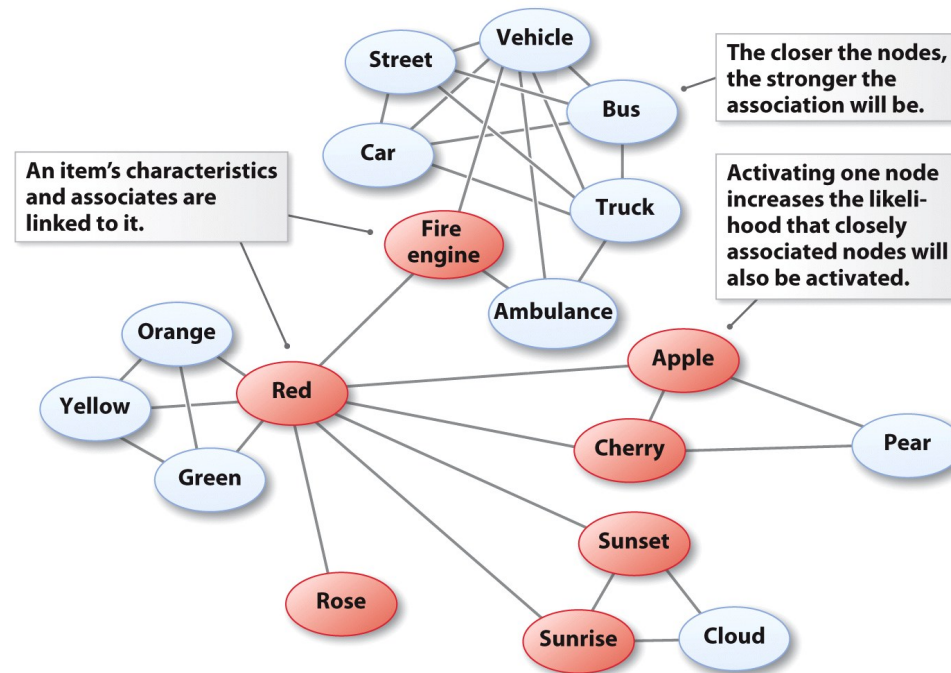
Storage: Associative Networks

Associative network model: Memories are organized in long-term memory storage based on the meaning of information. Concepts are connected through their associations. The closer the concepts are to each other, the stronger the association between them.

Tapping into the associations in long-term memory facilitate retrieval.



Organization of Long-Term Memory: Associative Network Model



Psychological Science, 4/e Figure 7.17
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A former student was in a multi-generational household. She was very close to her father. After her father died, she noticed that she was sad quite often.

Associative networks can help explain why she was sad quite often. Living in a multi-generational household, there were many reminders of things she did with her father. These items activated memories of her father, which made her sad.

Organization of Long-Term Memory: Associative Network Model



spuki
@desukidesu

julius: hey brutus, lookin' sharp

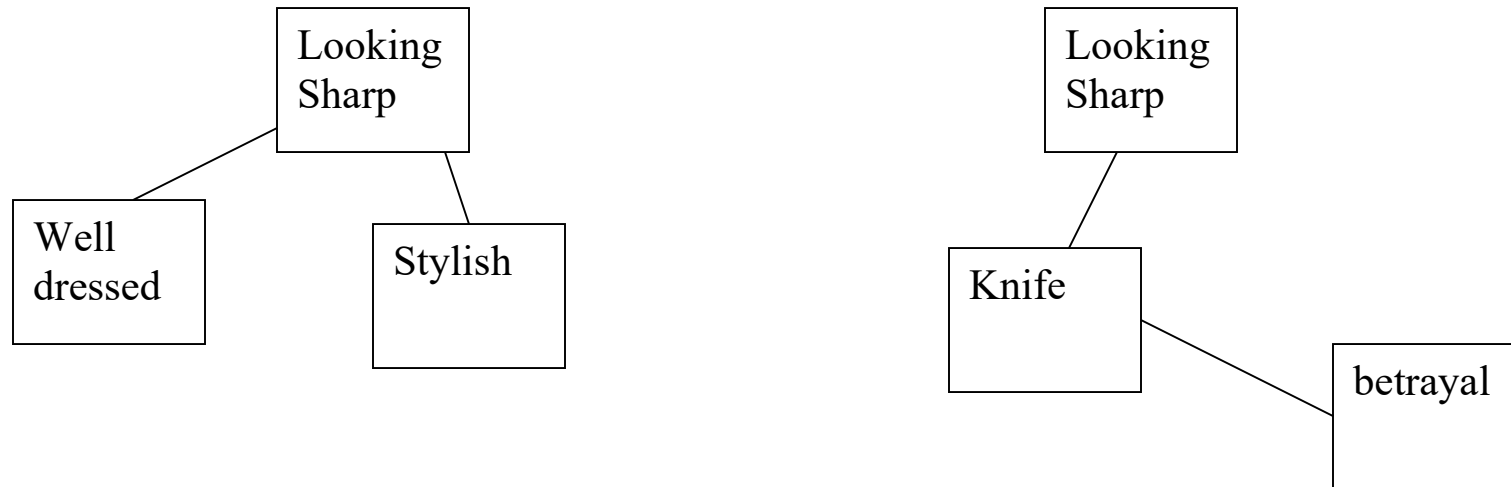
brutus: what knife

julius: what

brutus: what



Organization of Long-Term Memory: Associative Network Model



Stereotypes, Prejudice and Discrimination

Stereotypes, prejudice and discrimination are similar, but have subtle differences that are important in the social sciences. They often overlap with one another, but in some instances they do not.

- **Stereotypes**: Schemas that allow for easy, fast processing of information about people, events, or objects, based on how that information is categorized. There is not a value of good or bad associated with stereotypes. Inaccurate stereotypes, especially of stigmatized groups, can be a problem.
- **Prejudice**: Negative feelings, opinions and beliefs associated with a stereotype about people in a particular group.
- **Discrimination**: The inappropriate and unjustified treatment of people based on the groups they belong to.

The Implicit Association Test

Many prejudicial attitudes and associations are unconscious. The implicit association test measures the reaction time in how long it takes you to make a judgment between the color of a person's skin and positive or negative words.

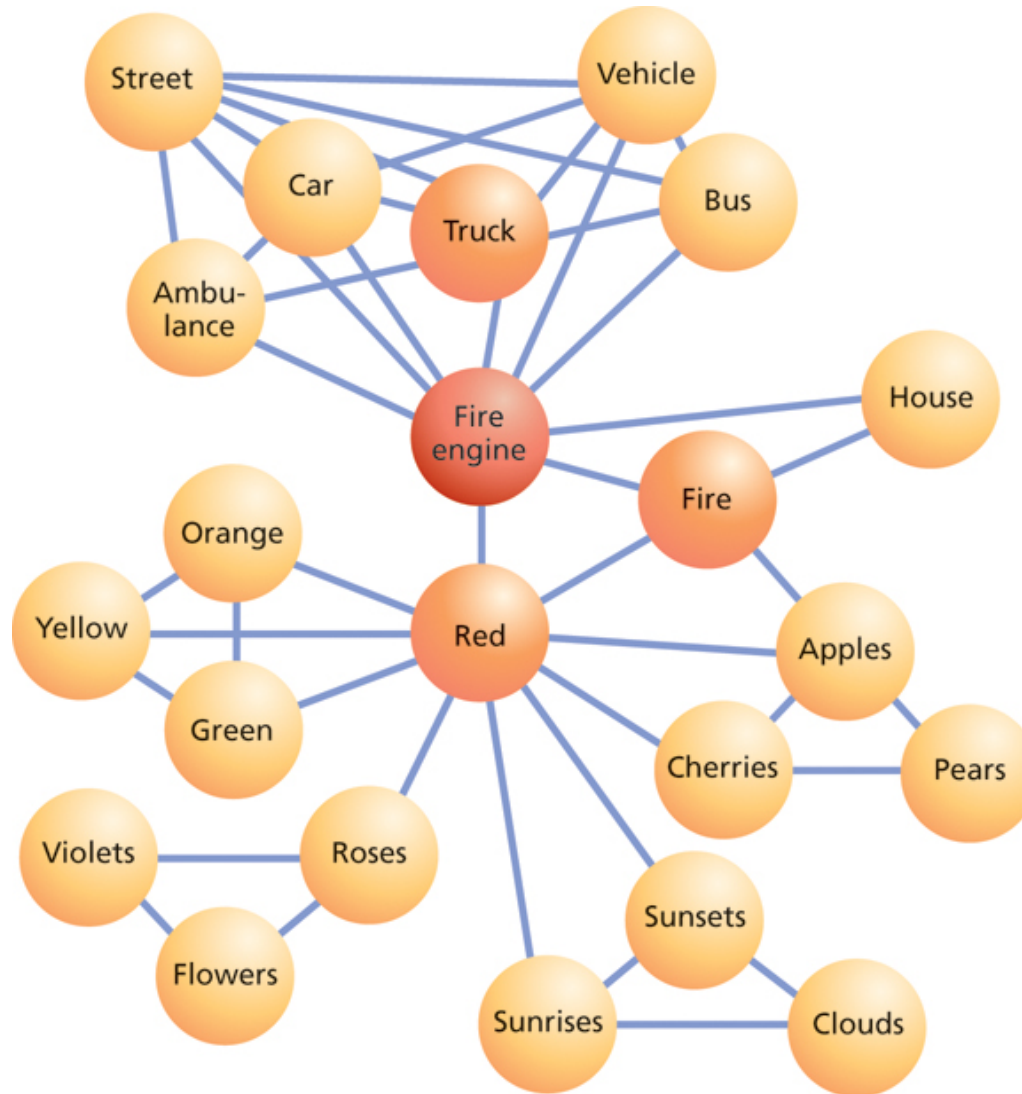
PREJUDICE AND DISCRIMINATION 409

The diagram illustrates the Implicit Association Test (IAT) with two sets of trials. Each set is presented in a box with a central mouse icon. Set 1: On the left, 'Photo of a Black person' or 'Positive word' (JOY). On the right, 'Photo of a White person' or 'Negative word' (ANGRY). Set 2: On the left, 'Photo of a Black person' or 'Negative word' (KNIFE). On the right, 'Photo of a White person' or 'Positive word' (SMILE). Two clock icons are present: one on the left and one on the right of the Set 1 box, and one on the left and one on the right of the Set 2 box. The clock icons are labeled '5 Minutes from Home'.

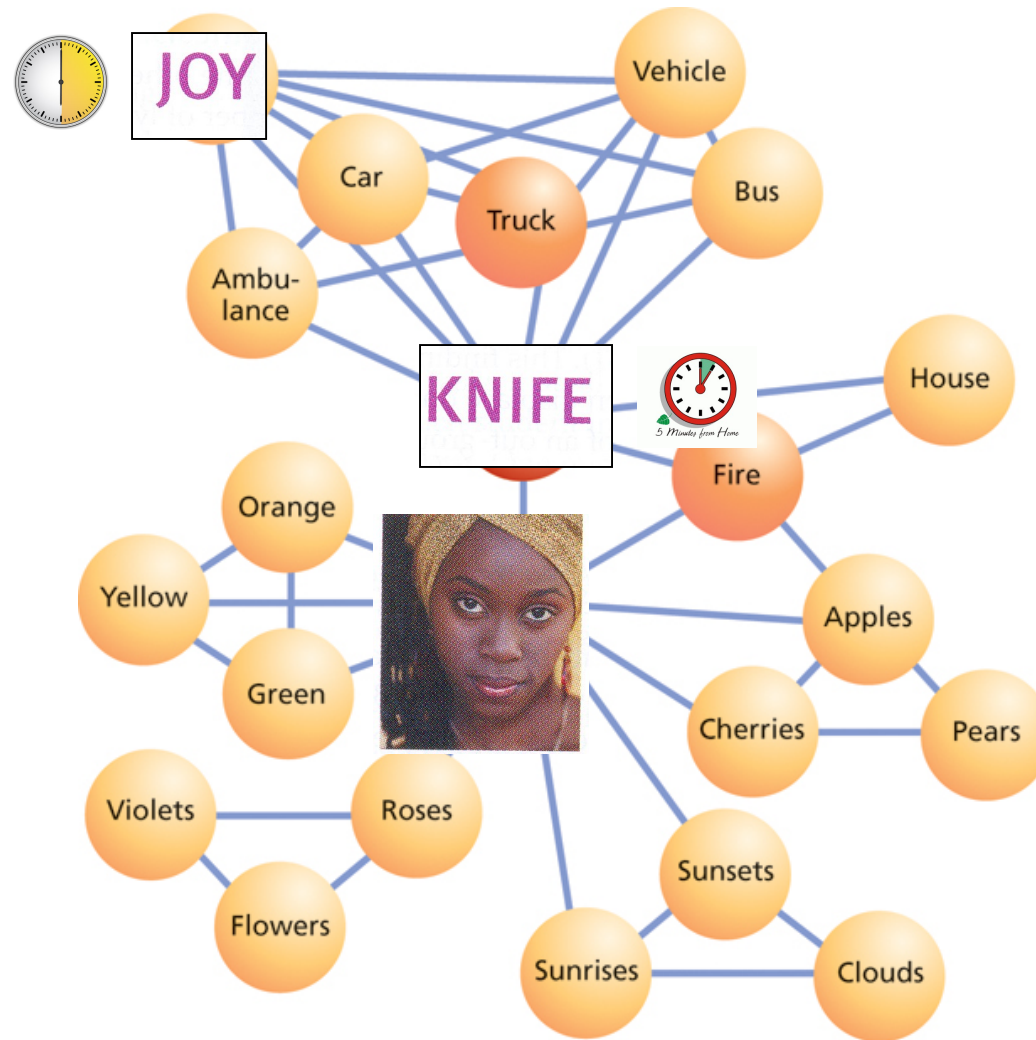
Figure 11.11 The Implicit Association Test. The Implicit Association Test (IAT) is the most widely researched measure of implicit or unconscious prejudice using examples like this one. Many people (across races) associate negative words more readily with African American than Caucasian faces. But does the test really measure unconscious prejudice, or does it measure something else?

Image source: Lilliefeld

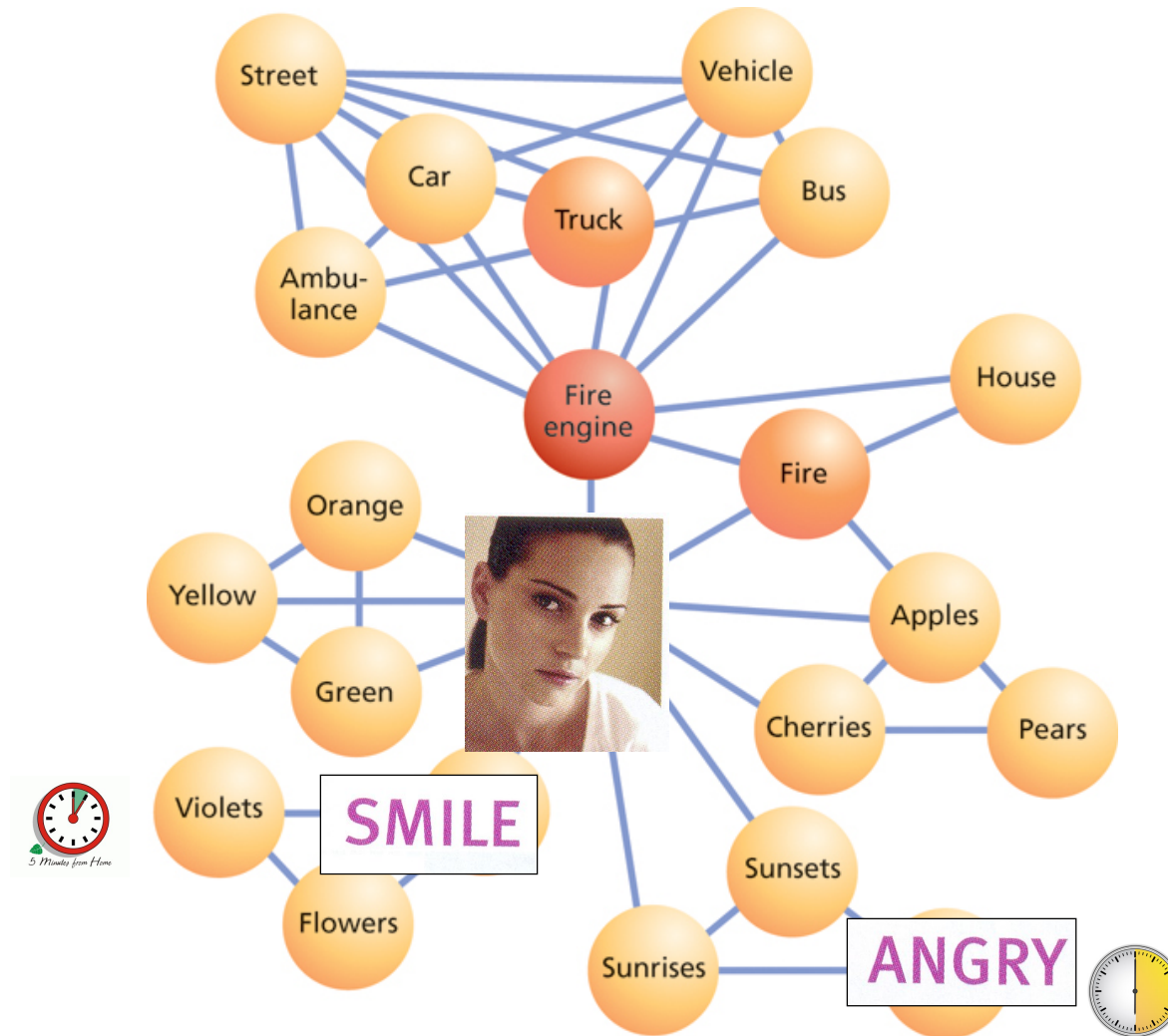
Associative Networks and the Implicit Association Test



Associative Networks and the Implicit Association Test



Associative Networks and the Implicit Association Test



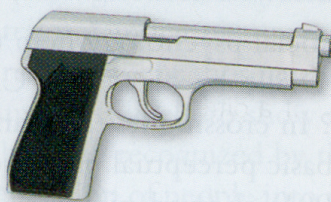
The Implicit Association Test

FIGURE 12.13 Scientific Method: Payne's Experiments on Stereotypes and Perception

Hypothesis: Social attitudes can influence basic perceptual processes.

Research Method:

- 1 White participants were shown a white or black face.
- 2 Immediately after viewing a face, participants were shown an object and asked to classify it as a gun or a tool as quickly as possible.



Results: Participants primed by seeing black faces identified guns more quickly and mistook tools for guns.

Conclusion: Implicit stereotypes affect perception.

The Implicit Association Test (IAT)

Just because you have a fast or slow reaction time between race and weapon or any of the other IAT, may or may not have prejudicial attitudes or discriminatory behavior. People can slow their thinking, acknowledge these associations, or have other positive experiences with members of different groups that can keep them from having prejudicial attitudes or discriminatory behavior.

- **Stereotypes**: Schemas that allow for easy, fast processing of information about people, events, or objects, based on how that information is categorized. There is not a value of good or bad associated with stereotypes. Inaccurate stereotypes, especially of stigmatized groups, can be a problem.
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